

NEW AUSTRALIAN SYRPHIDAE [DIPTERA] IN THE BISHOP MUSEUM.

By C. HOWARD CURRAN and E. H. BRYAN, JR.

(Communicated by Dr. E. W. Ferguson.)

[Read 31st March, 1926.]

The following species of Syrphidae have been identified in a small collection from Australia in the Bishop Museum, Honolulu. Five species are here described as new. The apparent abundance of species of *Psilota* is noteworthy, as this genus is poorly represented in other parts of the world.

The types of the new species are deposited in the Bernice P. Bishop Museum, Honolulu; paratypes, where present, in the Curran collection, Ottawa, Canada.

A complete list of the species identified is as follows:

- Triglyphus fulvicornis* Bigot. Sydney, Oct., 1915 (J. C. Bridwell).
Psilota caerulea Macquart. Brisbane, Sept., 1915 (J. C. Bridwell).
Psilota cyanea Hill. Brisbane, Sept., 1915 (J. C. Bridwell).
Psilota auricauda, n. sp. Brisbane and Sydney (J. C. Bridwell).
Psilota erythrogaster, n. sp. (No data, J. C. Bridwell).
Chrysogaster rufonasus, n. sp. (No data, J. C. Bridwell).
Asarcina aegrota (Fabricius). Cairns, Q. (A. P. Dodd).
Epistrophe viridiceps (Macq.). Sydney (Illingworth, Helms, Bridwell).
Syrphus confrater Wied. Sydney, May 24, 1909 (Helms).
Sphaerophoria australensis Schiner. Cairns, Q. (J. F. Illingworth).
Sphaerophoria menthastri (Linn.). Sydney, Nov., 1915 (J. C. Bridwell).
Bacca siphanticida Terry. Cairns, Q. (Illingworth and A. P. Dodd).
Simosyrphus grandicornis (Macq.) (= *Xanthogramma grandicornis*).
Wagga, Sept., 1904, and Bathurst, Oct., 1902 (Helms).
Lathyrrophthalmus arvorum (Fabr.). Babinda, Q. (J. F. Illingworth).
Eristalis tenax (Linn.). Sydney (Helms and Illingworth), Macleay River (Helms).
Eristalis smaragdi Walker. Cairns, Q. (J. F. Illingworth).
Eristalis decorus May. Sydney (Helms and Bridwell), Brisbane, Sept., 1915 (J. C. Bridwell).
Eristalis flavohirta Klocker. Cairns, Q. (J. F. Illingworth).
Helophilus hilaris Walker. Cairns and Gordonvale, Q. (Illingworth).
Microdon nigromarginalis, n. sp. Brisbane (Bridwell), National R.R., Sept. 25, 1904 (Helms).
Ceriodides subarmata, n. sp. Brisbane, Sept., 1915 (Bridwell).

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PSILOTA AURICAUDA, n. sp.

Black, the apical two and one-half segments golden pilose. Eyes white pilose. Length 10 mm.

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shining black, grey pollinose along the orbits on the lower fourth; strongly narrowed above. Occiput grey pollinose. Head with fine white pile, the upper fourth of the front with stronger black pile. Antennae brown, the first joint red at the base; the third obscurely reddish basally, hardly twice as long as wide, its upper apex rounded off. Arista black, as long as the antenna, tapering. The antennae reach the lower third of the face.

Pleura greyish pollinose. Mesonotum with a steel-blue reflection in some lights, the thorax white pilose.

Legs black; tibiae and tarsi shining brownish-red, the latter with the apical three joints black, the femora greyish pollinose, the coxae strongly so, the whole with conspicuous whitish pile. Posterior femora slightly swollen, their tibiae gently arcuate.

Wings hyaline, cinereous on the apical half; stigma brown. The apical cross-vein is oblique basally, roundly curved before its basal third and gently recurved before its apex so that it does not form a very acute angle with the third vein; discal cross-vein straight, oblique; the sector of the fourth vein beyond the discal cross-vein is three-fourths as long as the cross-vein. Spurious vein sub-obsolete. Squamae white, with narrow brown border and white fringe. Halteres pale yellow.

Abdomen shining black, the first two segments, and the broad sides, to the middle of the fourth segment, white pilose, the remainder with dense, erect golden-yellow pile.

Described from two females from Australia: Brisbane, Sept. 15, 1915, and Sydney, October, 1915 (J. C. Bridwell).

PSILOTA ERYTHROGASTER, n. sp.

Bright steel-blue, the abdomen reddish, the eyes white pilose.

Length 8.5 mm.

Female: Head, thorax and posterior femora steel-blue, the thorax with a purplish reflection. Face retreating, the oral margin prominent, but not produced as much as the antennal base; front narrowly grey pollinose along the orbits on the lower half; at the antennae not over one-fifth the width of the head, moderately narrowed to the vertex. Occiput thinly greyish pollinose, but along the orbits with dense greyish-yellow pollen. Pile of the head short, fine, whitish, rather dense along the lower frontal orbits, on the upper half of the front and the orbital cilia, black. Antennae light reddish, the third joint large, about one and one-half times as long as wide, moderately rounded off above; arista black, slender, tapering, as long as the antenna.

Thorax not pollinose, the pile short, sub-appressed, pale yellowish, perhaps a few black hairs above the base of the wings. Anterior coxae and prothorax grey pollinose.

Legs reddish, the posterior four femora blue, with obscurely reddish apices, the last two tarsal joints blackish; pile yellowish. Posterior femora moderately thickened, with black spinules below except basally, their tibiae gently arcuate and gradually thickened.

Wings hyaline, the veins yellowish or yellowish-brown; stigma luteous. Apical cross-vein oblique, slightly sinuous; discal cross-vein oblique, straight, more rectangular than usual. Spurious vein obsolete.

Abdomen dark reddish, with short, sparse, yellowish pile.

Described from a single female from Australia, bearing a greenish-blue label, but no data. J. C. Bridwell, collector.

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Psilota rubra Klocker seems to be a distinct species; the antenna is described as brownish, the third joint blackish above, the hind femora black or only the distal half black, the hind tibiae brownish. There also seem to be differences in venation.

CHRYSOGASTER RUFONASUS, n. sp.

Head and thorax shining blackish-green, the abdomen opaque black with margin and apex shining; oral margin broadly red from beneath the middle of the eyes to the prominent anterior edge which is slightly more prominent than the antennal base.

Length 4 mm.

Female: Face, from the oral tip to the base of the antennae, scarcely one-fourth as long as the distance from oral tip to vertex very sharply excavated, thinly yellowish pollinose, devoid of hair except along the side pieces. Front wide, slightly narrowed above, twice as long as wide, clothed with fine, sparse, whitish pile. Occiput thinly greyish pollinose and short white pilose. Antennae reddish-yellow; third joint sub-orbicular, slightly wider than long, the arista longer than the antenna, thickened on the basal fourth, black on the basal half, reddish apically. Antennal pits broadly separated. Sides of front smooth, not at all wrinkled.

Pleura and anterior coxae thinly greyish pollinose. Thorax with very short, sparse, whitish pile. Scutellum rather narrowed to the apex, which is rounded, thus being somewhat triangular in shape.

Legs reddish, only the hind tibiae with a broad sub-apical brown band.

Wings slightly tinged with yellow, the veins yellow; stigma pale yellow. Both the apical and discal cross-veins are slightly oblique and rise at an angle, the fourth and fifth veins continuing towards the wing margin. Anterior cross-vein not more than twice its length from the base of the discal cell. Squamae white, with very narrow brownish border and very short brownish fringe.

There is a rather large, longitudinal reddish spot on the base of the abdomen at either side, but this is probably not normal, as it is more distinct on one side than the other. Pile very short, yellowish. All the segments of the ovipositor simple.

Described from a single female from Australia, bearing a blue label, but no data. (J. C. Bridwell.)

ASARCINA AEGROTA (Fabricius).

Eristalis aegrotus Fabricius, *Syst. Antl.*, 1805, p. 243.

Two females, Cairns, North Queensland (A. P. Dodd). Pupal cases.

EPISTROPHE VIRIDICEPS (Macquart).

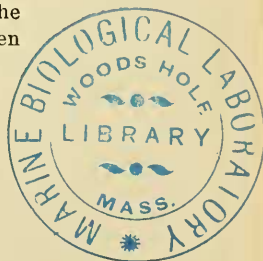
Syrphus viridiceps Macquart, *Dipt. Exot.*, Sup. ii, 1847, p. 77.—? *Syrphus collatus* Walker, *Dipt. Saund.*, 1852, p. 233.

Sydney, N.S.W., Sept., 1902, Dec., 1903 (Helms), Oct., 1915 (Bridwell), Aug., 1921 (Illingworth).

SPHAEROPHORIA AUSTRALENSIS (Schiner).

Melithreptus australensis Schiner, Novara, p. 347.

A single male from Cairns, North Queensland (J. F. Illingworth), agrees perfectly with the description of the female as given by Schiner. The species is very close to and most probably identical with *Syrphus javanus* Wiedemann. The genitalia are much smaller than is usual in *Sphaerophoria* and the abdomen slightly wider.



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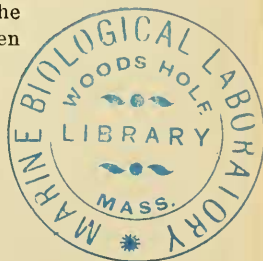
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LATHYROPIITHALMUS ARVORUM (Fabricius).*Syrphus arvorum* Fabr., *Ent. Syst.*, iv, p. 286.

Male: Babinda, Q., 1920 (J. F. Illingworth).

MICRODON NIGROMARGINALIS, n. sp.

Head chiefly brownish-reddish; third antennal joint one and two-thirds as long as the first, which is short; mesonotum black, the margin and scutellum brownish. the pile on the latter silvery white, except on the margin where it is abundant, black, erect.

Length 11 to 12 mm.

Female: Face hardly one-third the head width, the front about two-fifths head width. Face brownish-yellow, convex-receding, most prominent just below the antennae, rather strongly convex transversely, the depressed sides white pubescent, the pile moderately abundant, silvery-white. Front brownish-red, the middle slightly depressed; a triangle reaching from the base of the antennae to the middle of the front and the small ocellar triangle, blackish; pile black, but whitish on the broad orbits below and across the middle. The occiput black, but the reddish of the vertex extends a short distance along the orbits, the whole greyish-white pollinose and white pilose; cheeks black behind. Antennae reddish-brown, with much of them reddish, but evidently variable, although the first joint is reddish, the third chiefly brown; first joint not more than two and one-half times as long as wide, gradually narrowing from apex to base; second joint two-thirds as long as the first, its apex not wider; third joint equal to or slightly longer than the first two combined, cylindrical or nearly so apically, narrowing to a rounded apex on the terminal third; arista about as long as the third joint, stout, tapering, brown, with reddish base. Eyes bare.

Mesonotum slightly shining black, with large, shallow punctures, the margin, except the wide anterior and narrow posterior, brownish-red; pile on the dark areas, except the broad anterior and narrow posterior margins, short black; on the margins, as well as on the pleura and scutellum, silvery-white. Pleura brownish-red, the scutellum concolorous; pectus largely darker. Scutellum with a broad apical fringe of up-growing black pile from the upper to lower margin; its apex broadly rounded, not emargined and without spines.

Legs brownish-red, the femora more or less black in front and behind, but variable in this respect and they may have only a black basal spot in front. Femora with short black hair, the tibiae with conspicuous appressed silvery-white hair except on the apical fourth of the hind pair.

Wings very broadly clouded with brown along the veins so as to leave only the middle of the cells hyaline. Anterior cross-vein separated from the base of the discal cell by less than its own length; stump of vein straight, oblique, rising just before the middle of the apical cell; both apical and discal cross-veins recurrent, with rounded bulge posteriorly. Squamae whitish, with yellowish border and fringe. Halteres reddish-yellow.

Abdomen brownish-black, the base and whole margin brownish-red, this colour gradually grading into blackish on the disc. Pile blackish, the whole lateral margin and broad, widely interrupted apical fasciae on the second to fourth segments with appressed silvery-white pile which is very conspicuous in some views; the fifth segment has the apical third similarly pale pilose, narrowly interrupted on the middle line and less widely so sublaterally. Sides of the abdomen subparallel on basal half, without depressions.

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Described from two females from Brisbane, Q. (Bridwell). A third specimen labelled "National R.R., 25.ix.1904 (Helms)" has the antennae a little shorter and the scutellum a little more transverse apically. In this specimen the lengths of the antennal joints are as 4:2:7, while in the others they are as 4:3:8.

CERIOIDES SUBARMATA, n. sp.

Abdomen pedunculate; hind trochanters angularly produced postero-ventrally; scutellum yellow, with brownish base; face yellow, with brown median stripe and posterior half of cheeks.

Length 14 to 15 mm.

Male: Face yellow, a moderately broad median stripe, a broad transverse stripe below the antennae (narrowed at the sides), the cheeks and frontal triangle except at the sides, rusty brownish; in profile rather prominent on the lower half as the middle portion is raised, but again retreating to the oral margin. Eyes separated by a distance equal to the thickness of the antennal pedicel; vertical triangle rusty reddish, the upper part of the occiput of the same colour; along the orbits on the lower half yellow, elsewhere brown. Cheeks with a blackish stripe extending from the lower edge of the eye to the oral border, the latter blackish on the posterior half. Head with rather sparse yellowish pile. Antennae and pedicel rusty reddish, the latter as long as the face, the first antennal joint rather slender, three-fourths as long as the pedicel, the second joint almost as long as the first, cylindrical, widest apically, evenly narrowed to the base, the third joint about as long as the first two combined, strongly narrowed to its middle, thence slightly narrowed to its tip, the style weakly differentiated, more than one-fourth as long as the third joint.

Thorax granular, dull black, the humeri and a small spot at the outer end of the suture yellow, the area below the humeri and also below the base of the wing more or less ferruginous, the pile very short, white on the pleura and brown on the dorsum. Scutellum yellow with less than the basal half brown or blackish, its pile mostly pale and quite short.

Legs reddish, the hind femora with only the broad base and apex of this colour, the intervening space black, the anterior four femora black on the sub-basal half, but the hind surface wholly reddish or the black colour may be less extensive; hair of legs all whitish. Posterior trochanters produced as an angular projection, hind femora slightly arcuate, somewhat thickened, widest sub-apically, the tarsi broad.

Wings tinged with brownish; quite brownish on the anterior third; third vein moderately curved into the apical cell, the fourth vein curving around and back to join the apex of the discal cross-vein; anterior cross-vein slightly oblique, situated a little beyond the middle of the discal cell.

Abdomen dull black, the first two segments moderately shining, the narrow apices of the third and fourth yellow, the second reddish except an incomplete basal fascia and the apical third, opposite which the pile of the sides decreases in width until it reaches the apex, along which it extends inward a short distance. The second segment forms a slender peduncle which widens slightly from the apical third to the apex, the following segments forming an elongate oval; the first two segments are fused, there being only a more or less distinct suture. The terminal segments are cinnamon-brownish when viewed from in front, the rather large genitalia reddish or brownish-yellow. Abdominal pile chiefly whitish, but brown on the dorsum of the terminal two segments, longest on the sides and venter.

Described from three males from Brisbane, Sept., 1915 (J. C. Bridwell).

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Abdomen pedunculate; hind trochanters angularly produced postero-ventrally; scutellum yellow, with brownish base; face yellow, with brown median stripe and posterior half of cheeks.

Length 14 to 15 mm.

Male: Face yellow, a moderately broad median stripe, a broad transverse stripe below the antennae (narrowed at the sides), the cheeks and frontal triangle except at the sides, rusty brownish; in profile rather prominent on the lower half as the middle portion is raised, but again retreating to the oral margin. Eyes separated by a distance equal to the thickness of the antennal pedicel; vertical triangle rusty reddish, the upper part of the occiput of the same colour; along the orbits on the lower half yellow, elsewhere brown. Cheeks with a blackish stripe extending from the lower edge of the eye to the oral border, the latter blackish on the posterior half. Head with rather sparse yellowish pile. Antennae and pedicel rusty reddish, the latter as long as the face, the first antennal joint rather slender, three-fourths as long as the pedicel, the second joint almost as long as the first, cylindrical, widest apically, evenly narrowed to the base, the third joint about as long as the first two combined, strongly narrowed to its middle, thence slightly narrowed to its tip, the style weakly differentiated, more than one-fourth as long as the third joint.

Thorax granular, dull black, the humeri and a small spot at the outer end of the suture yellow, the area below the humeri and also below the base of the wing more or less ferruginous, the pile very short, white on the pleura and brown on the dorsum. Scutellum yellow with less than the basal half brown or blackish, its pile mostly pale and quite short.

Legs reddish, the hind femora with only the broad base and apex of this colour, the intervening space black, the anterior four femora black on the sub-basal half, but the hind surface wholly reddish or the black colour may be less extensive; hair of legs all whitish. Posterior trochanters produced as an angular projection, hind femora slightly arcuate, somewhat thickened, widest sub-apically, the tarsi broad.

Wings tinged with brownish; quite brownish on the anterior third; third vein moderately curved into the apical cell, the fourth vein curving around and back to join the apex of the discal cross-vein; anterior cross-vein slightly oblique, situated a little beyond the middle of the discal cell.

Abdomen dull black, the first two segments moderately shining, the narrow apices of the third and fourth yellow, the second reddish except an incomplete basal fascia and the apical third, opposite which the pile of the sides decreases in width until it reaches the apex, along which it extends inward a short distance. The second segment forms a slender peduncle which widens slightly from the apical third to the apex, the following segments forming an elongate oval; the first two segments are fused, there being only a more or less distinct suture. The terminal segments are cinnamon-brownish when viewed from in front, the rather large genitalia reddish or brownish-yellow. Abdominal pile chiefly whitish, but brown on the dorsum of the terminal two segments, longest on the sides and venter.

Described from three males from Brisbane, Sept., 1915 (J. C. Bridwell).